Press Release

For More Information, Call:

Robert J. Alvey
communications manager
Arkansas Science & Technology
Authority
(501) 324-9006

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Authority Funds R&D Project in Northwest Arkansas

The Arkansas Science & Technology Authority (ASTA) Board of Directors has authorized research and development funding for electro-optic force-sensing systems and load cells. The R&D is being performed by Twenty-First Century Engineering Inc. (TFCE) of Fayetteville, Ar.

TFCE was established in 1990 to provide engineering consulting services to Northwest Arkansas and to research and develop products for potential manufacture.

The technology under development would create electro-optic force-sensing systems and load cells that would be immune to electromagnetic interference (EMI) and would be relatively unaffected by high levels of moisture, thereby reducing or removing the potential for corrosion, according to Julie Welch, Authority Research Program manager. "The system employs a sensor and an electronic module that consists of a light source, a receiver and a tube. As applied loads place pressure on the tube, the amount of light passing through the tube changes. The change in light transmission is converted into a change in voltage, the displacement is recorded and the applied load is registered."

TFCE plans to first pursue the food processing market in Northwest Arkansas for its product. A measuring device manufacturer has queried the company about providing load cells for their products sold to Tyson Inc.

The total cost of the project is estimated at $65,500. Of that figure, the Authority would invest $50,000 in Technology Development Program funds; the remaining $16,500 will be provided by TFCE. The University of Arkansas, Fayetteville is the assignee of the intellectual property rights for the technology, and has a binding agreement with TFCE that allows them use of the technology. The terms of the investment award authorize the Authority to collect up to a five percent royalty from revenues generated by the technology development investment for a maximum period of 10 years.

The project will initially include Dr. Ali Manish, TFCE president; Dr. Joe Wrobel, vice president of Research and Development for TFCE; one full-time mechanical engineer and three to five part-time technical staff members. TFCE predicts that it will manufacture 100 prototypes for development and testing during the first year. By 1997, it hopes to be ready to relocate from office space in the GENESIS Technology Incubator to a manufacturing facility in Northwest Arkansas.

About the TFCE officers

Manish received his doctorate of philosophy degree in computer-aided design from Michigan State University in 1982. He received a master of science degree in machine design from Gannon University in 1979 and his bachelor of science degree in metallurgical engineering from Tehran University in 1977. He has over 15 years of industrial and teaching experience in manufacturing engineering, and is currently employed by Superior Industries of Fayetteville, where he is the engineering manager for design, development and manufacturing responsible for verification and application of new technologies, failure, stress and finite element analysis, and automation and product improvement.

Wrobel attended Syracuse University in Syracuse, NY where he earned his doctorate of philosophy in 1967, as well as masters and bachelors degrees in physics in

1964 and 1961, respectively. He was previously employed by the University of Arkansas' Computer Science Engineering Department as an associate professor from 1985-92. He

has over 20 years of industrial experience with Texas Instruments Inc. of Dallas, Tx, where he developed software for

the application of visual pattern recognition and digital image processing for the automation of assembly lines using robots and automatic testing systems.

The Arkansas Science & Technology Authority serves as a statewide funding resource for high quality scientific and technological projects. The Authority endeavors to bring the benefits of science and technology to the people and state of Arkansas through scientific research, technology development, business innovation and education.

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